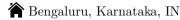
# Avneesh Mishra

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theprojectsguy.github.io



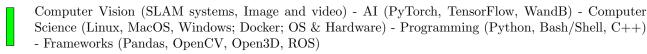


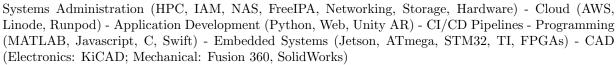


#### Profile

A Computer Vision and AI researcher from IIIT-H with a background in Robotics and Mechatronics engineering. Skilled at developing and deploying cutting-edge research from literature to hosting. Other skills include system administration and full-stack web development.

# Areas of Experience





Hobbies: Reading, finance, cooking

## Education

M.S. by Research (CSE) Robotics Research Center (RRC), IIIT Hyderabad

August 2021 to July 2024

CGPA 10/10

- Thesis: Foundation Models for Visual Place Recognition
- RRC Summer School 2022 Multi-View Geometry (GitHub)
- SLAM (Simultaneous Localization and Mapping) using cameras, VPR systems, local features matching, global image descriptors.
- Group equivariant deep learning, rotation robust descriptors for feature matching
- Courses: Computer Vision, Statistical Methods in AI, and Mobile Robotics
- Student SysAdmin (from May 2022 to Feb 2023)

# B.Tech. in Mechatronics Engineering

Manipal Institute of Technology

July 2016 to July 2020

CGPA 9.88/10 (Gold Medalist)

- Minor in Robotics and Artificial Intelligence
- Quarter-finalist for IICDC (DST&TI) 2018
- Technical Head of ISA (Manipal Chapter)
- Research head of RoboManipal (Robotics student project) and organized RoboWars (event) for TechTatva. Participated in RoboCon 2018.

## Experience

### Consultant

Hitloop, Hyderabad

July 2023 to November 2023

- Google Mediapipe and OpenMMLab solutions for detecting pose and facial landmarks.
- Dubbing use-cases for multi-lingual content creation. Lip-sync and voice cloning.

- Assisted in maintaining a SLURM HPC cluster with NFS, RAID, and networking components.
- Oversaw FreeIPA computing environment of RRC for simulation servers. Multi-user access and dataset storage. Developed shell scripts for report generation, user management, and HPC job scheduling.
- Assembled powerful workstations with multiple GPUs. Ensured high up-time of servers through continuous Netdata monitoring and alerts.
- Created and maintained documentation and custom scripts for RRC simulation servers and Ada HPC system.

#### Consultant

Artpark, RBCCPS, IISc Bangalore

March 2021 to August 2021

- Teleoperation using Asha (Sophia from Hanson Robotics) with Team Aham for the ANA Avatar XPrize challenge.
- Experience with HTC Vive (AR/VR) in Unity. Also worked with ROS (RViZ, kinematics) and Eigen.
- Teleoperation of a KUKA robotic arm and web-streaming setup to measure end-to-end latency (using USB/IP).

#### Student Intern

CAIR, DRDO, Bangalore

December 2019 to July 2020

- Developed a quadruped test platform (software and embedded program) to execute gaits for my end-term report.
- Kinematics and dynamics of a quadruped
- Embedded systems: CAN bus, motor control

### Internship Trainee

ABB Bangalore

May 2019 to July 2019

- IRB Robots for pick & place, pelletizing, welding, and coordinate measurement. Part of industrial training
- Worked on collaborative robot YuMi and ABB RobotStudio.
- GUIs using TKinter (Python).

#### Research Intern

Sirena Technologies, Bangalore

May 2018 to July 2018

- First experience with computer vision, artificial intelligence, robotics (kinematics), and various software frameworks.
- Hand recognition and gesture recognition using OpenCV

# **Publications**

- Keetha, N., Mishra, A., Karhade, J., Jatavallabhula, K. M., Scherer, S., Krishna, M., & Garg, S. (2023). "Anyloc: Towards universal visual place recognition". 2023 IEEE Robotics and Automation Letters. Website, GitHub, torch.hub
- Peri, A., Mehta, K., Mishra, A., Milford, M., Garg, S., & Krishna, K. M. (2022). "ReF Rotation Equivariant Features for Local Feature Matching". arXiv preprint arXiv:2203.05206.